

REMARKS

Claims 1-9, 11-13, and 16-21 are pending in the present application. All pending claims have been rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,414,741 (Hasegawa, et al.) in view of U.S. Patent Application Publication No. 2004/0046909 (Sekiguchi). Applicant has amended claims 1, 7, 12, and 20, and has canceled claims 13 and 21. No new matter has been added.

Applicant urges that independent claims 1 and 12 are not obvious over the combination of Hasegawa and Sekiguchi for at least the reasons presented below.

At the very least, Hasegawa does not disclose or suggest a system or method of manufacturing a liquid crystal display that includes *an inspection unit [that] comprises two sub-units for inspection before and after the bonding of the PCB, respectively*, as essentially claimed in claims 1 and 12. .

Hasegawa discloses a method for manufacturing a flat panel display device that a pair of CCD cameras for aligning a tape carrier package (TCP) to the display cell, prior to a thermo-compression bonding of TCP to the display cell, and for aligning the TCP to a wiring board before the TCP is soldered to the wiring board. Although the Examiner concedes that Hasegawa discloses a wiring board, not specifically a printed circuit board (PCB), the Examiner cites Sekiguchi as disclosing a PCB as an example of a wiring board. Although Hasegawa discloses an inspection of the alignment of the TCP with the display cell after the thermo-compression bonding (see Col. 7, l. 46 to Col. 8, l. 35), there is no disclosure in Hasegawa of an inspection after soldering the TCP top the wiring board. Hasegawa discloses how the TCP and wiring board are aligned (Col. 7, l. 45-57), and bonded by means of soldering (Col. 7, l. 57-61). After the soldering step is described, Hasegawa's disclosure proceeds to describe how the light-control tape is pasted onto the display cell. Thus, Hasegawa does not disclose *an inspection unit . . . for inspection before and after the bonding of the PCB*, as recited in claims 1 and 12.

Furthermore, although the inspection unit disclosed in Hasegawa includes a pair of CCD cameras, both cameras are used to determine alignment of the TCP with the display cell before the thermo-compression bonding (see Col. 6, l. 56 to Col. 7, l. 42), and both are used to inspect TCP and the display cell after the thermo-compression bonding (Col. 7, l. 46 to Col. 8, l. 35). There is no disclosure of one camera being used to align the TCP and the display panel before bonding, and the other camera being used to inspect the TCP and the display panel after bonding. Thus, Hasegawa does not disclose *an inspection unit [that] comprises two sub-units for inspection before and after the bonding of the PCB, respectively*, as essentially claimed in claim 1.

Hasegawa also discloses lead wires on the TCP and branch wires on the display panel that serve as alignment marks. In the Action, the Examiner alleges that “the dummy lead wires and the alignment marks are provided for inspection of the bonding of the PCB, before and after bonding.” Applicant urges that the Examiner mischaracterizes Hasegawa, because the dummy lead wires serve as alignment marks, and because the dummy lead wires, being part of the TCP and the display panel, are part of the finished product and are not part of the inspection unit. Thus, the dummy lead wires in Hasegawa do not disclose or suggest *an inspection unit [that] comprises two sub-units for inspection*, as essentially recited in claim 1.

The Examiner further cited Col. 12, l. 6-11 of Hasegawa to support the allegation that an alignment inspection is performed after bonding the wiring board using the alignment marks. Applicant urges that the Examiner is again mischaracterizing Hasegawa. The passage cited by the Examiner describes how the use of alignment marks prior to the bonding steps enables an accurate alignment between the array substrate and the TCP, and between the TCP and the wiring board. This passage discloses nothing regarding an inspection after soldering the TCP to the wiring board to achieve an accurate alignment.

The Examiner cited Sekiguchi as disclosing a liquid crystal display with a color filter array panel and a printer circuit board. Sekiguchi is directed to a liquid crystal display panel that includes a structure for preventing electrolytic corrosion of lead

electrodes that supply electric signals to pixel electrodes. However, Applicant urges that Sekiguchi does not rectify the deficiencies of Hasegawa described above, as Sekiguchi discloses nothing regarding *an inspection unit [that] comprises two sub-units for inspection before and after the bonding of the PCB, respectively*, as essentially claimed in claims 1 and 12.

Thus, Applicant urges that the combination of Hasegawa and Sekiguchi do not teach or suggest all of the claimed features of claims 1 and 12. Therefore, Applicant urges that a *prima facie* case of obviousness of claims 1 and 12 over the combination of Hasegawa and Sekiguchi cannot be maintained. Reconsideration and withdrawal of these rejections are respectfully requested.

Claims 2-9 and 11 depend from claim 1, and are thus patentable for at least the same reasons as claim 1. Claims 16-20 depend from claim 12, and are thus patentable for at least the same reasons as claim 12. Reconsideration and withdrawal of these rejections are respectfully requested.

Claims 13 and 21 have been canceled, and Applicant urges that the rejection of these claims is now moot.

Amended claims 7 and 20 are patentable for additional reasons. The Action states that Hasegawa discloses that the inspection unit detects dents generated by the compression. Claims 7 and 20, as amended, recite that *the inspection unit determines whether a dent number generated by the compression is uniform, wherein the dent number is the number of conductive particles between gate pads of the TFT array panel and leads of said printed circuit film*. The inspection disclosed in Hasegawa determines the extent to which conductive particles are crushed and two-dimensionally spread out

along the substrate face. (See Col. 7, l. 60-67.) Hasegawa discloses nothing about a dent number, or whether or not a uniform dent number is consistent with finding crushed particles spread out along the substrate face, and Sekiguchi does not rectify this deficiency. Thus, Applicant urges that the subject matter of claims 7 and 20 is neither taught nor suggested by the combination of Hasegawa and Sekiguchi, and that claims 7 and 20 are not *prima facie* obvious over Hasegawa and Sekiguchi. Reconsideration and withdrawal of these rejections are respectfully requested.

CONCLUSION

Applicant urges that claims 1-9, 11-12, and 16-20 are in condition for allowance for at least the reasons stated. Early and favorable action on this case is respectfully requested.

Respectfully submitted,

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